Simon 5

Protocol Simulator/Monitor

Dynatech
Data Systems

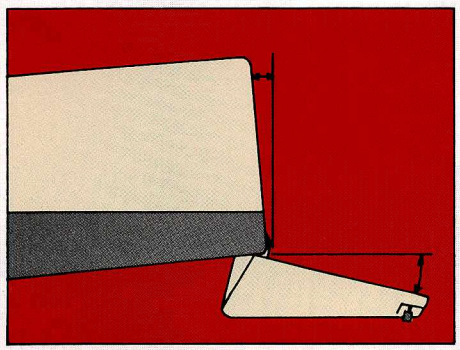
SIMON 5 represents a combination of power and simplicity thus far unprecedented in protocol analyzers — WE GUARANTEE IT!

A network control center is a busy place, filled with the hustle and bustle of phone calls, conferences and problem solving. Let SIMON become an integral part of your network control center, opening a much-needed window into the complex and changing world of data communications.

SIMON's approach to troubleshooting makes your job easy. Its 2¼ million character removable hard disk effortlessly captures data at 64K bps FDX. The innovative multiprocessor architecture used in SIMON provides the power to handle complicated tasks at today's high data rates. Dynatech recognizes it isn't enough just to be powerful — we implemented a control technique that truly can be considered simple. It combines our proven menu approach with an uncluttered keyboard, powerful softkeys, a HELP key and a disk-based training system.

SIMON incorporates Dynatech's 20 years of experience in designing and manufacturing test and network control equipment. It represents state-of-the-art design and contemporary packaging. **We welcome the opportunity to demonstrate SIMON in the most demanding environment of all . . . yours.**

Engineered for efficient operation



SIMON is packaged with portability and versatility in mind. Its compact size and light weight make service calls a breeze. The high-resolution screen and detachable keyboard are designed for convenient viewing and operation. SIMON works well in any environment, whether on the road or in your console.

Just a glance at SIMON tells the story. The logical grouping of mode, disk, editing and display keys, plus color coded designations and an uncluttered layout combine to reduce errors and simplify data entry. Whether displaying data, frame and packet headers or program listings, SIMON's presentation is always clear and concise.

SIMON never confuses you with inconsistent screen formats. The top two lines of the CRT always provide a summary of the current test parameters, complete with a battery backed real-time clock. Data is always displayed in the center portion of the screen, with counter and timer values below it. The bottom of the screen is always used for softkey presentation. The softkeys (keys whose labels are on the bottom line of the CRT) control SIMON. This concept minimizes distractions and reduces keyboard clutter.

SIMON provides the means to solve your problems

SIMON's powerful and varied diagnostic capabilities are divided into four operating modes accessed through clearly labeled keys. You tell SIMON what you want to do — from selecting a PROTOCOL to running a PROGRAM — simply by pressing a mode key.

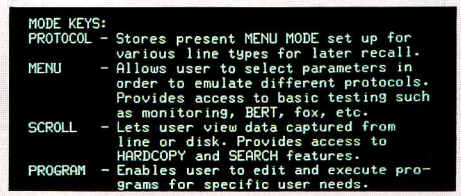
SIMON provides Trapping, Event Counting, Transmission Tests (fox and keyboard) and BERT (patterns transmitted and analyzed) as standard MENU selections. No programming is required. Pick your format and SIMON selects the rest of the parameters for you. SIMON's MENU mode quickly pinpoints problems such as parity and block check errors, faulty addressing, and link initialization failures, even at high data rates. Its large 8000-character buffer is further enhanced by the largest and fastest data capture media on the market today!

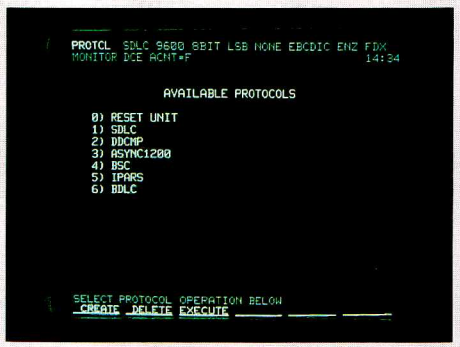
A full range of pre-stored menu tests can be quickly accessed simply by pressing the PROTOCOL key. This mode stores up to eight sets of tests, such as monitoring, event counts, BERT, and the I/O parameters necessary to operate them. These are stored in non-volatile memory under user-entered names. "SDLC," the example shown at the right, is a pre-established test setting up SIMON to monitor a link and display real-time data in tabular form.

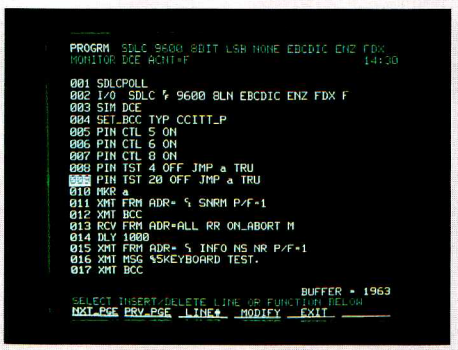
SIMON is a powerful aid for developing communications software, troubleshooting problems and evaluating network hardware. Our straightforward sequential programming technique makes creating and debugging easy. Build a program using the instructions on the softkey line by simply selecting the desired key. Each step is displayed in English for your convenience; syntax errors are impossible! Programs are stored in a large non-volatile memory. A directory page lists the available programs, their size and the remaining memory. We've even provided, on disk, standard programs — from simple polling to sophisticated statistics gathering. SIMON's PROGRAM mode will simulate and test virtually any protocol.

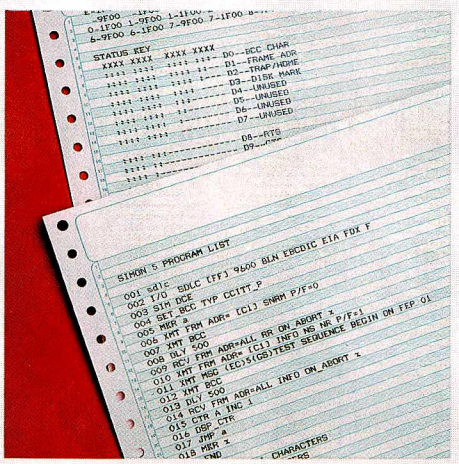
View, search or print data easily using SIMON's SCROLL mode. You can search the captured data for any specified patterns, events or errors. Data can be displayed in English or hex, compared with the interface status, checked for BCC errors, put in clear text display or printed via the hardcopy port. Each data printout contains a key at the bottom of the page, providing a reference to the interface status. The softkeys reduce the SCROLL mode functions to a few keystrokes.

Just a glance at SIMON tells the story


MODE KEYS:
PROTOCOL - Stores present MENU MODE set up for various line types for later recall.
MENU - Allows user to select parameters in order to emulate different protocols. Provides access to basic testing such as monitoring, BERT, fox, etc.
SCROLL - Lets user view data captured from line or disk. Provides access to HARDCOPY and SEARCH features.
PROGRAM - Enables user to edit and execute programs for specific user needs.



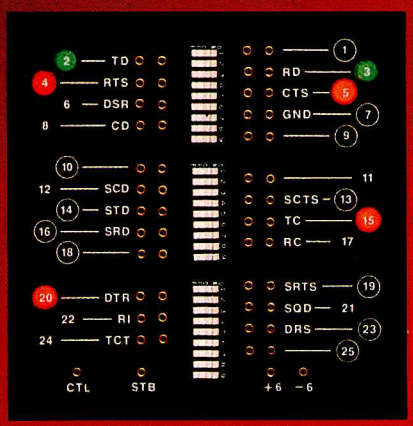

PROGRM SDLC 9600 8BIT LSB NONE EBCDIC ENZ FDX
MONITOR DCE ACNT=F 14:30
001 SDLCPOLL
002 I/O SDLC 9600 8LN EBCDIC ENZ FDX F
003 SIM DCE
004 SET_BCC TYP CCITT_P
005 PIN CTL 5 ON
006 PIN CTL 6 ON
007 PIN CTL 8 ON
008 PIN TST 4 OFF JMP a TRU
009 PIN TST 20 OFF JMP a TRU
010 MKR a
011 XMT FRM ADR= 5 SNRM P/F=1
012 XMT BCC
013 RCV FRM ADR=ALL RR ON_ABORT M
014 DLY 1000
015 XMT FRM ADR= 5 INFO NS NR P/F=1
016 XMT MSG %5KEYBOARD TEST.
017 XMT BCC
BUFFER = 1963
SELECT INSERT/DELETE LINE OR FUNCTION BELOW
NXT PGE PRV PGE LINE# MODIFY EXIT



Simon

solves your data communications problems with ease.

HELP? X.25 9600 8BIT LSB NONE ASCII EIA FDX
FOX DTE ACNT=B 05:20
In MENU mode, the following parameters can be selected:
FORMAT - ASYNC, SYNC, SDLC, HDLC(X.25), etc.
BAUD - EXTERNAL, 19200, 9600, 7200, etc.
BITS - 5, 6, 7, 8.
PARITY - NONE, ODD, EVEN, etc.
CODE - ASCII, EBCDIC, BAUDOT, etc.
ORDER - LSB, MSB.
INTERFACE- RS232C, INVERTED, NRZI, etc.
DISPLAY - FDX, HDX, etc.
TX/RX - MONITOR, FOX, BERT, etc.
SIMULATE - DTE, DCE, etc.
ACCENT - PINS, FRAMES, BCC CHAR(S), etc.
SUPPRESS - MARK LINE, CHAR(S).
TRAP - OR, AND.
EOM - end of message chars.
DLE&EOM - DLE & end of message chars.
PRESS HELP KEY TO RETURN TO NORMAL OPERATION.
FORMAT BAUD BITS PARITY CODE ETC

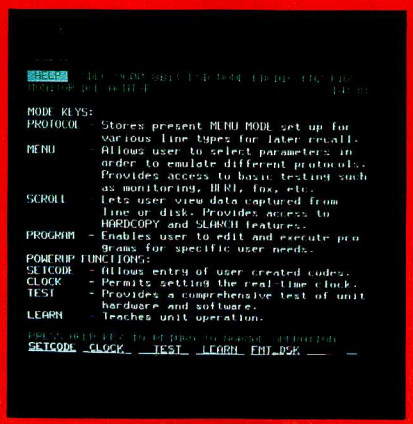


Plug-in interface modules assure compatibility

For **interactive** testing or passive monitoring, you can change SIMON's interface from RS-232/MIL-188C to V.35, X.21 or RS-449 by plugging in modules. These interface modules provide a breakout test panel designed for the specific interface you choose, complete with tri-state LEDs, plus test points and switches for each circuit. A rear-mounted module provides the appropriate connectors for each interface.

Our hard disk stores over 2 million characters of line data

To store data, insert a disk then press the RECORD key. To retrieve the data, just press PLAY. It's that easy. When captured data is played back on the screen the replay rate may be varied. Use SIMON's power to pinpoint problems by playing the recorded data against a program of your choice.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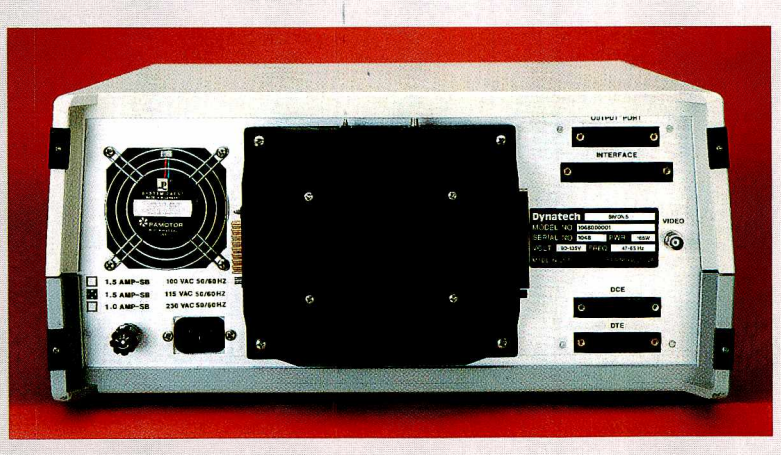
MENU - Allows user to select parameters in order to emulate different protocols. Provides access to basic testing such as monitoring, BERT, fax, etc.
SCROLL - Lets user view data captured from line or disk. Provides access to HARDCOPY and SEARCH features.
PROGRAM - Enables user to edit and execute programs for specific user needs.
POWERUP FUNCTIONS:
SETCODE - Allows entry of user created codes.
CLOCK - Permits setting the real-time clock.
TEST - Provides a comprehensive test of unit hardware and software.
LEARN - Teaches unit operation.
SETCODE CLOCK TEST LEARN FMT_DSK

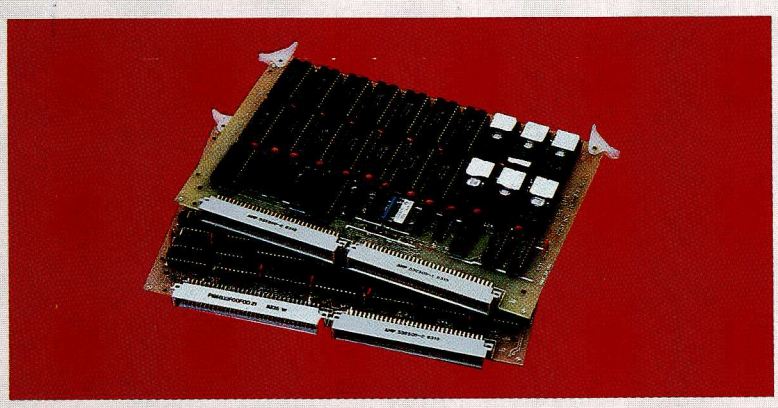
Help is just a keystroke away

Your entire staff can operate SIMON. If you encounter difficulties, SIMON is ready to assist you. Press the HELP key and SIMON will point you in the right direction.

Learning to use SIMON is easy

SIMON's powerful training system combines a special disk with a comprehensive manual. Don't expect just a playback of recorded data, SIMON provides more. Beginning with the basic operation through typical applications, our unique presentation will quickly put you on-line. Learn to use SIMON at home, in a conference room or on the road.





SIMON is built to take it

From its rugged interior to its impact resistant shell, SIMON is designed to take the physical abuse associated with field use and still perform day after day, year after year. SIMON's circuit card assemblies are secured in a heavy-duty card cage to minimize the effects of shock and vibration. **All** of SIMON's semi-conductor components are pre-stressed. Each SIMON undergoes complete burn-in and stringent quality control, assuring it will stay in your network control center working for you.

SIMON belongs in the field . . . Dynatech keeps it there!

SIMON 5 SPECIFICATIONS

Modes

Protocol

8 sets of menu tests and I/O parameters for line and hardcopy port stored in 2000 bytes of non-volatile memory.

Menu

BERT — (63, 511, 2047) with display of blocks sent and received; bits in error and blocks in error (block = 8 bits async, 1000 bits sync).
Fox — Standard "Fox" message.
Keyboard — Keyboard data sent (asynchronous only).
Event Count — Counts occurences of events defined by the MENU trap question.
Monitor — Stores data received by the unit in buffer or disk.
Trap — AND (8 characters), OR (4 characters) with bit masking and don't care provided.

Program

Holds up to 24 programs to a maximum of 4096 bytes in non-volatile memory.
Counters — 4, labeled A, B, C, D (each 6-digit) plus 8-bit line counters.
Timers — 4, labeled W, X, Y, Z each with millisecond resolution and measuring up to one hour.
Program Source — Line or disk source may be used to interact with programs.
Hardcopy — Print values of counters, timers and comments to printer without losing data.

Scroll

Hardcopy — Print data (English or hex) with or without status to an async printer. Printer's parameters set separately.
Search — Look for lead changes, data errors and data sequences.
Scroll — Look through data in the buffer on a line-by-line basis.
Accent — View lead relationships with data for six pins of the interface (based upon module selected).

Communications Parameters

Format/ Protocols

Asynchronous — (1, 1.5 and 2 stop bits) with LRC-8.
Synchronous — One or two sync characters (if two are specified, they may be different). Check sum (BCC) selectable for CRC-16 and LRC-8.
Bisync — Checksum (BCC) selectable for CRC-16 and LRC-8.
SDLC — Data with control bytes and addresses in clear text, user-selectable address and CRC-CCITT preset.
DDCMP — (Synchronous) With CRC-16 checksum.
IPARS — With CRC-6 checksum.
HDLC — (X.25) Data with control bytes for both frame and packet level in clear text. CRC-CCITT preset.
Transparent — Format to allow reception of synchronous data in unknown format.

Interfaces

EIA RS-232C (CCITT V.24) and MIL-188 standard. Input impedance greater than 33K ohms. Output voltage +6 or -6 VDC nominal. CCITT V.35, CCITT X.21 and EIA RS-449 available as optional interface modules. Both NRZI and normal data supported.

Codes

ASCII, EBCDIC, BAUDOT, IPARS, PTTC and SELECTRIC standard. Two additional user defined codes stored in non-volatile memory.

Data Rates

50, 75, 100, 110, 134.5, 150, 200, 300, 600, 1200, 1800, 2000, 2400, 3600, 4800, 7200, 9600 and 19,200 bps internal. User-definable speeds up to 64K bps full-duplex. External clock rates up to 64K bps full-duplex. Printer rates 50-9600 bps.

Character Length & Parity

Asynchronous: 5 to 8 data bits with (odd, even, mark or space) or without parity.
Synchronous: 5, 6, 7 data bits with (odd, even, mark or space) or without parity;
8 data bits with (odd or even) or without parity.

Bit Order

Least significant bit or most significant bit first.

(Specifications continued on back cover)

SIMON 5 SPECIFICATIONS (continued)

Data Display

CRT

7-inch diagonal screen. 1152 characters in 24 lines, 48 characters per line. Lines 1 and 2 used for menu (I/O) summary and the real-time clock. Lines 20, 21 and 22 used for comments including the counters (A, B, C, D) and timers (W, X, Y, Z). Line 23 used for question summary line. Line 24 used for softkey line.

Data displayed on lines 4 through 19; receive data in normal video, transmit data in reverse video; full duplex on alternating lines, half duplex in chronological sequence; selectable for receive or transmit data only; accents with high/normal-intensity video. Transmission and BCC errors indicated by underlining.

RS-232 Monitor/ Breakout

14 tri-state LEDs (green = mark, red = space, orange = toggling, off = intermediate voltages): 12 LEDs for interface circuits; one LED for strobe (STB); and one LED for control (CTL). Switched test points for 24 leads (signal ground not switched); test points for pin 7 (GND), voltage sources (+6 and −6 VDC) and selectable pins (STB and CTL). Status byte stores pins 4, 5, 6, 8, 20 and any other user selected lead (STB).

Buffer

8000 characters total: receive, transmit or duplex. For each character, two bytes of status are stored: the lead status byte (status of six pins, transmission error bit and channel — RD or TD) and the control status byte (BCC indicator, SDLC/HDLC frame address indicator, disk marker).

Hard Disk Unit

Capacity

5 megabytes total: 4½ megabytes data, (2¼ million datawords. Each dataword contains two 8-bit bytes; one for the data character and one for status, as defined under RS-232 Monitor/ Breakout). ½ megabyte reserved for storage of 24 programs.

Operating Speed 64K bps full-duplex.

Storage Data is stored and played back as line data.

Rear Panel Connectors

DTE/DCE 2 EIA RS-232C (CCITT V.24) connectors (male for DTE, female for DCE).

Video Output BNC, RS-170 connector for external CRT.

Printer Output EIA RS-232C (CCITT V.24) for standard asynchronous ASCII printers.

Physical / Environmental

Power 90 – 250 VAC, 47–63 Hz, single phase, 1.5 amp (100/115 VAC) or 1.0 amp (230 VAC).

Dimensions 16¾ inches (43 cm) wide; 7¾ inches (20 cm) high; 20 inches (51 cm) deep.

Weight 35 pounds (16 kg)

Operating Temperature +5°C to +40°C ambient (+41°F to +104°F). 85% relative humidity non-condensing.

Altitude 10,000 feet (3,000 meters) maximum.

Accessories

Included RS-232 Interface Module with 6 foot (180 cm) male/female ribbon cable; instruction manual, training disk and workbook; disk with operating system (backup); breakout panel jumpers; and 6-foot AC power cord.

Optional 12-inch video monitor; V.35, X.21, RS-449 Interface Modules; rain cover; additional hard disk cartridges; transit case.

Dynatech Data Systems

800 368–2210

7644 Dynatech Court
Springfield, VA 22153
(703) 569–9000

European Marketing Headquarters
Chemin de Montjean
Sentier 506
94266 Fresnes Cedex
France
Tel: (33–1) 668–2175

DATACOMMUNICATIONS
TEST
INSTRUMENTS

DOMESTIC PRICE LIST
FOR
DIAGNOSTIC EQUIPMENT

Simon 5 Protocol Monitor/Simulator with Disk Drive (Includes one Training disk and one User disk):

$ 14,995.00

Simon 5 Options:

Hard Disk Cartridge (User disk)	$ 108.00
Transit Carrying Case	$ 516.00
RMA-SIMON Rack Mount Adapter	$ 450.00
Remote Control Cable	$ 70.00

Simon 5 Interface Adapter Modules:

SIAM-35 (V.35)	$ 1,290.00
SIAM-449 (RS-449)	$ 1,290.00

ALL OTHERS, CONSULT FACTORY

Test Set Options:

External Video Monitor, 12 inch diagonal portable	$ 250.00
Interconnect Cable, Video Monitor, 10 Ft length	$ 20.00
Travel Caddy for Carrying Case	$ 30.00

MISCELLANEOUS:

1. EIA Cable (M-F)	$ 68.00
4. Manual, Simon 5	$ 240.00
5. Interface Jumper Wires	$ 6.50

F.O.B. Point: Springfield, Virginia.

Terms: Terms are net 30 days.

All Prices are Subject To Change without Notice.

7666 Fullerton Road, Springfield, VA 22153 Phone: 703/569-5800 Telex 89-9119

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W A R R A N T Y

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ALL DATACOMMUNICATIONS TEST INSTRUMENTS Test Equipment products are guaranteed for a period of one year after receipt by the original purchaser.

Under this Warranty, defective equipment will be either replaced or repaired at the option of DATACOMMUNICATIONS TEST INSTRUMENTS. Datacommunications will pay all transportation costs on equipment being returned for warranty repair.

Liability under this Warranty extends only to the replacement value of the equipment. This Warranty is void:

1. If equipment has been altered or repaired without specific authorization by DATACOMMUNICATIONS TEST INSTRUMENTS.

2. If equipment is installed or operated other than in accordance with instructions contained in DATACOMMUNICATIONS TEST INSTRUMENTS Literature and Instruction Manuals.

After expiration of this Warranty, equipment may be returned to DATACOMMUNICATIONS TEST INSTRUMENTS for repair. Customer must pay all transportation costs plus the standard time and material rates in effect at the time of repair.

SIMON 5 IS A REGISTERED TRADEMARK OF DATACOMMUNICATIONS TEST INSTRUMENTS.

ORDERING INFORMATION

Minimum Order Charge:

The minimum order is $200.00 A shipping/handling charge of $15.00 will be added to all orders less than $200.00.

Order Modification Charge:

A handling charge of $50.00 will be added to any order modified by the customer after receipt by Datacommunications of the customer's confirming order. All modifications are subject to acceptance by Datacommunications.

Equipment Return And Order Cancellation Policy:

Special terms apply for equipment returns and order cancellation. Please consult DATACOMMUNICATIONS TESTS INSTRUMENTS for details.